

Unit 1 – Interactions in Ecosystems (Ch. 2)

Chapter 2.1 - Biotic and Abiotic Factors in Ecosystems

1. _____ is the study of how organisms interact with each other and with their physical environment. The simplest level of _____ that _____ study is called an _____. A _____ is the term used to describe where an organism lives. The term used to describe all of the organisms of the same species that share a habitat is _____.
2. A _____ is all the populations in a particular area that interact with each other. This is the _____ level of organization. The fourth and most complex level of organization, that includes the living community as well as the physical environment in the area, is called an _____. The Earth as an ecosystem is often called the _____. The biosphere includes the soil, oceans, and the _____.
3. Place the following in order from smallest to largest: community, population, organism, biosphere, ecosystem, species.
4. What are biotic and abiotic factors? Provide two examples of each.
5. Ecosystems are constantly undergoing _____. When an ecosystem is undergoing continuous change but the overall system is remaining stable it is known as a _____ equilibrium. Ecosystems can often adjust to small changes, however many ecosystems sometimes have one factor, known as a _____ that is the very critical in determining the types of organisms that can exist in the area.
6. What are some limiting factors in aquatic environments?

Chapter 2.2 - Ecological Roles and Relationships

1. Elements and compounds in the soil, atmosphere and water that _____ must have in order to live and grow are called _____.
2. What are some nutrients that plants need? What about humans?
3. Organisms that can make their own food, usually using energy from the _____, are called _____ or _____. In aquatic environments, _____ that obtain their own food from the Sun's energy are called _____. Not all producers use the Sun's energy and _____ to make food, for example organisms that live deep within caves or live _____ floor.
4. _____ or _____ are organisms that consume other organisms or biotic waste to survive. Consumers that eat producers are called _____ or _____ consumers.
5. What are some primary consumers in terrestrial and aquatic environments?
6. Consumers that eat other consumers are called _____. Some consumers eat both producers and consumers, these organisms are called _____. Some examples of omnivores are _____ and _____.
7. What are detritivores? How are they related to decomposers and how do decomposers lead to biodegradation?

8. _____ occurs when a consumer captures and eats other organisms. These types of organisms are called _____. Not all of them are fast moving carnivores, some are organisms that rarely move and sit on the floor of an aquatic environment such as _____.
9. Cyclic trends that show falls and rises in both _____ and prey populations are called _____ cycles.
10. Explain how predator-prey cycles work.

Chapter 2.3 - Symbiosis

1. A close relationship between two different species is known as _____.
2. Define the three major types of symbiosis.
3. Provide an example of mutualism.
4. Provide an example of commensalism.
5. Provide an example of parasitism.

6. How can parasites play a positive role?
7. Many plant parasites obtain _____ from a host plant, instead of obtaining their own food through the process of _____.

Chapter 2.4 - Trophic Levels and Energy Flow

1. The position of an organism in relation to the order of nutrient and _____ transfers in an ecosystem is referred to as a _____. The first trophic level is composed of _____. The second trophic level is composed of _____ that eat those in the first trophic level. The third trophic level is occupied by _____.
2. How do decomposers fit into the trophic levels?
3. A _____ shows a pathway taken by nutrients and energy through the trophic levels of an ecosystem.
4. Explain the food chain involved when a killer whale eats a sea lion.
5. What happens to parts of an organism that are not eating by a consumer?
6. The waste products of all organisms are also consumed by _____.
7. Decomposers provide the soil with _____. _____ such as vultures, are also important in the food chain in that they hinder the spreading of _____ as they feed on decaying bodies of recently killed animals.

8. How does a food web differ from a food chain?

Chapter 2.5 - Ecological Pyramids

1. The pathway of energy through an ecosystem is often shown using an ecological _____, also known as a _____. The three basic types of pyramids that ecologists use are: a pyramid of _____, a pyramid of _____, and a pyramid of _____.
2. What does a pyramid of energy show?
3. On average only approximately _____% of energy present in one trophic level is passed onto the next level. Most of the energy at any levels is used for basic life _____. Ecosystems rarely have more than _____ trophic levels as there is simply not enough energy to support the organisms at the top of the energy pyramid.
4. What does a pyramid of numbers show?
5. Why is it that some pyramids of numbers show a higher second level than a first level?
6. What does a pyramid of biomass show?
7. In most pyramids of biomass there is a traditional shape with the _____ trophic level having the most biomass. However, in some ecosystems the pyramid is inverted. For example, in many _____ systems a small biomass of algae may be supporting a _____ of _____.

Vocabulary to Know

Write a concise definition of each of these terms found in this Unit.

Abiotic factor -

Autotroph -

Biodegradation -

Biosphere -

Biotic factor -

Carnivore -

Commensalism -

Community -

Consumer -

Decomposer -

Detrivore -

Ecological pyramid -

Ecology -

Ecosystem -

Food chain -

Food pyramid -

Food web -

Habitat -

Herbivore -

Heterotroph -

Host -

Limiting factor -

Mutualism -

Nutrients -

Omnivore -

Organism -

Parasitism -

Population -

Predator -

Predator-prey cycle -

Prey -

Primary consumer -

Primary producer -

Producer -

Pyramid of biomass -

Pyramid of energy -

Pyramid of numbers -

Symbiosis -

Trophic level -